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Please cancel claims 1-29

Please add the following new claims

30. (Amended) A method for generating and evaluating a sample cut in an electronic engraving machine for engraving printing cylinders for rotogravure, comprising the steps of:

forming an engraving control signal for driving an engraving stylus of an engraving element from engraving data which represent tone values to be engraved between "light" and "dark" and a periodic raster signal for generating an engraving screen;

with the engraving stylus engraving a sequence of cups arranged in the engraving screen into the printing cylinder engraving line by engraving line, geometry values of said cups determining the engraved tone values;

engraving sample cups for predetermined tone values before actual engraving;

positioning a video camera to a predetermined, axial measurement position and registering a video image of the sample cups with the video camera;

selecting at least one of the engraved sample cups;

identifying a positional deviation of a measurement location of the selected sample cup from a reference location in the video image as a position error;

correcting the identified position error by at least one of axial displacement of the video camera into a new measurement position and turning the printing cylinder such that the measurement location of the selected sample cup lies at least in a region of the reference location of the video image;

subsequently measuring geometry values of at least the selected sample cup and comparing them to geometry values of the predetermined tone values; and

calibrating the engraving control signal dependent on a result of the comparison so that the engraved tone values correspond to the predetermined tone values.

31. (Amended) The method according to claim 30 wherein a sample cup representing a mid-tone value between "light" and "dark" is selected.

33. The method according to claim 30 wherein the measurement location is an area mid-point of the selected sample cup.

34. The method according to claim 30 wherein the measurement location is a mid-point of one of the transverse diagonals and of the longitudinal diagonals of the selected sample cup.

35. The method according to claim 30 wherein the measurement location is a mid-point of one of a pilot cut and of a web of the selected sample cup.

36. The method according to claim 30 wherein the reference location for determining the positional

deviation of the selected sample cup in the video image lies in a middle of the image.

36. The method according to claim 30 wherein the reference location for determining the positional deviation of the selected sample cup in the video image is a coordinate origin of a measurement coordinate system in the video image.

37. The method according to claim 30 wherein the video image is subdivided into pixels; and a position of the pixels in the video image is defined by coordinates of a video coordinate system allocated to the video image.

38. The method according to claim 30 wherein

the video image is subdivided into pixels;

a measurement field displaceable across the video image is generated;

the measurement field comprises at least one measurement line with a plurality of pixels whose position in the video image is defined by coordinates of a video coordinate system; and

a length of a measurement distance in the video image is determined as a plurality of pixels of the measurement line.

39. The method according to claim 38 wherein the measurement field is designed stripe-shaped.

40. The method according to claim 38 wherein the measurement field can be arbitrarily oriented in the video image.

41. The method according to claim 38 wherein the measurement distance corresponds to the spacing of two contours belonging to a sample cup from one another.

42. The method according to claim 38 wherein contours of the sample cup are recognized by an automatic evaluation of the video image.

43. The method according to claim 42 wherein contours of the sample cup are recognized by means of at least one measurement line of the measurement field.

44. The method according to claim 43 wherein

every pixel of the video image has a video datum allocated to it that identifies whether a corresponding pixel is a component part of the sample cup or not;

video data of respectively two successive pixels of the measurement line of the measurement field are investigated for a change; and

an identified change of the video data is recognized as a contour.

45. The method according to claim 38 wherein the selected sample cup is automatically recognized in the video image with assistance of a displaceable measurement field.

46. The method according to claim 45 wherein

a size of a cup area of the selected sample cup is prescribed;

the measurement field is defined having a size corresponding at least to the cup area of the selected sample cup;

the measurement field is shifted across the video image from sample cup to sample cup;

the cup area of the respective sample cup is measured in every position of the measurement field and compared to the prescribed cup area; and

a sample cup is recognized as selected sample cup given at least approximate area coincidence.

47. The method according to claim 46 wherein

the size of the cup area of the selected sample cup is prescribed as a plurality of pixels;

the measurement field comprises a plurality of measurement lines aligned parallel to one another;

the cup area of a sample cup is determined by adding up pixels in the individual measurement lines that fall into the cup area; and

the prescribed plurality of pixels is compared to the measured plurality of pixels in the area comparison.

48. The method according to claim 30 wherein a measurement location of the selected sample cup and its position in the video image is automatically determined with the assistance of a displaceable measurement field.

49. The method according to claim 48 wherein the measurement location is an area mid-point of the selected sample cup; and one of a transverse diagonal and a longitudinal diagonal of the selected sample cup is measured with the measurement field as a measurement distance, whereby the area mid-point derives as one of half of the transverse diagonal and half of the longitudinal diagonal.

50. The method according to claim 38 wherein

two printing cylinders coupled to one another are engraved with a respective engraving element;

the engraving elements are arranged on a shared engraving carriage;

a video camera is allocated to each engraving element;

the first video camera is positioned to a predetermined, first measurement position;

an axial position error of the first video camera is measured in the predetermined, first measurement position;

the measured axial position error of the first video camera is corrected by displacing the shared engraving carriage into a new, first measurement position;

geometry values of the sample cups engraved on the first printing cylinder are measured at the new, first measurement position of the first video camera;

an axial position error of the second video camera in a momentary position of the shared engraving carriage is measured;

a new axial position error is calculated for the second video camera;

the calculated, axial position error of the second video camera is corrected by displacing the shared engraving carriage into a new, second measurement position; and

geometry values of the sample cups engraved on the second printing cylinder are measured at the new, first measurement position of the first video camera.

51. (Amended) The method according to claim 30 wherein sample cups for the tone values "light", "dark" and at least one "mid-tone value" are engraved in the sample engraving.

52. (Amended) The method according to claim 30 wherein the sample cups for the tone values "light", "dark" and "mid-tone value" are respectively engraved on neighboring engraving lines.

53. The method according to claim 30 wherein at least one sample cup is engraved on each engraving line.

54. The method according to claim 30 wherein the geometry values to be measured are at least one of transverse diagonals, longitudinal diagonals, pilot cuts, web widths and cup areas of the engraved sample cups.

59. (Amended) A method for generating and evaluating a sample cut in an electronic engraving machine for engraving printing cylinders for rotogravure, comprising the steps of:

forming an engraving control signal for driving an engraving element from engraving data which represent tone values to be engraved between "light" and "dark" and a periodic screen signal for generating an engraving screen;

with the engraving stylus engraving a sequence of cups arranged in the engraving screen into the printing cylinder engraving line by engraving line, geometry values of said cups determining the engraved tone values;

engraving sample cups for predetermined tone values before actual engraving;

positioning a video camera to a predetermined, axial measurement position and registering a video image of the sample cups with the video camera;

selecting at least one of the engraved sample cups;

identifying a positional deviation of a measurement location of the selected sample cup from a reference location in the video image as a position error;

correcting the identified position error by moving at least one of the video camera and the printing cylinder such that the measurement location of the selected sample cup lies at least in a region of the reference location of the video image;

subsequently measuring geometry values of at least the selected sample cup and comparing them to geometry values of the predetermined tone values; and

calibrating the engraving control signal dependent on a result of the comparison so that the engraved tone values correspond to the predetermined tone values.

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